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Remarks

Claims 1-20 are pending in the present application. Claims 1-3, 6-8, and 10-11 have been rejected. Claims 4, 5, 9, and 12-20 have been withdrawn.

In view of the new arguments/remarks set forth below, Applicant respectfully requests reconsideration of the present application.

Applicant's Response to Rejection of Claims Under 35 U.S.C. §103

Claims 1-3, 6-8, and 10-11 have been rejected under 35 U.S.C. §103(a) as unpatentable over Japanese patent 11-158733 to Aranaga et al. ("Aranaga") in view of U.S. Patent No. 4,038,452 to Kobayashi et al. ("Kobayashi.") These rejections are respectfully traversed on the grounds that the Examiner has failed to establish a *prima facie* case of obviousness.

The present invention provides a non-woven fabric including bicomponent fibers oriented in a well-defined plane, where the fabric has a bulk density of 0.2-0.4 g/cm³. This fabric has the advantages of a higher toughness and higher stretch recovery that have not been previously realized in the art.

According to M.P.E.P. §2143, "To establish a *prima facie* case of obviousness, three basic criteria must be met." There must be a suggestion or motivation to combine the references, a reasonable expectation of success, and the references must teach every element of the claims. Applicant respectfully submits that each of these elements is deficient as set forth below.

Claim Elements

The combination of Aranaga with Kobayashi fails to teach or suggest every element of the present claims. Specifically, neither Aranaga nor Kobayashi discloses, teaches or suggests (1) a polyester bicomponent fabric having a bulk density of 0.2-0.4g/cm³ or (2) a fabric wherein the fibers are oriented in a well-defined plane.

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The Examiner has cited Kobayashi for the purposes of providing the bulk density of the fabric. Kobayashi discloses a non-woven fabric including 50-95% by weight of spontaneously crimped acrylonitrile polymer fibers. The fabric is disclosed as having an apparent density of 0.05 to 0.25g/cm³. Out of context, it would appear that this density overlaps with the density range of the present invention from 0.20 to 0.25g/cm³, however, density is not an appropriate parameter for direct comparison between fabrics having fibers of different polymer compositions. There are some characteristics of fibers which are directly comparable such as fiber length, which are not dependent on the molecular weight of the polymer from which the fiber is prepared. Density is a characteristic of a fiber which depends, in part, on the composition of the polymer itself. Acrylonitrile, polyethylene terephthalate and polytrimethylene terephthalate all have different molecular weights, and therefore different densities. Therefore, it cannot be assumed that the density of a fabric including acrylonitrile fibers is comparable to the density of a fabric including polyester bicomponent. As such, Kobayashi fails to disclose, teach or suggest a polyester bicomponent fabric having a density in the range of 0.20 to 0.40g/cm³, as required by the present claims.

Kobayashi also fails to disclose teach or suggest a fabric wherein the fibers are oriented in a well-defined plane. Kobayashi discloses a bulky non-woven fabric which includes a fibrous web wherein, "simultaneously with crimp development, the web is shrunk in the surface area and increases in thickness." (Column 7, lines 56-59). Kobayashi provides no control to the thickness of the fabric and teaches that no outer mechanical force should be applied that would limit the increase in thickness of the fabric. This method is contrary to the development of a fabric with fibers oriented in a "well-defined plane" as required by the present invention. This is achieved through the use of two constraining surfaces which limit the thickness of the fabric. (Paragraph [0012]). The production of a well-defined plane is essential to provide the higher density resulting in higher toughness and higher stretch recovery of the fabrics of the present invention (Paragraph [0021]).

Since Kobayashi fails to disclose, teach, or suggest either a density of a non-woven polyester bicomponent fabric in the range of 0.20 to 0.40 g/cm³ or a non-woven fabric in the configuration of a well-defined plane, the combination of Aranaga and Kobayashi fails to provide a *prima facie* case of obviousness.

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Motivation to Combine

The motivation to combine references or modify a reference must be found in the prior art, however, no such motivation is present in either Aranaga or Kobayashi. The Examiner states at page 3, line 11 of the Office Action dated October 14, 2005 ("the Office Action"), that one having ordinary skill in the art would combine the teachings of Aranaga with Kobayashi, "motivated by the expectation of successfully practicing the invention of Aranaga." The Examiner seems to be stating that there is some deficiency in the teachings of Aranaga. However, the only deficiency that the Examiner points out is the deficiency of Aranaga to disclose the elements of the present claims. Specifically, the Examiner states that Aranaga does not disclose "the orientation of the fibers, the number of crimps per inch, the crimp radius of curvature, and the bulk density of the non-woven fabric." (page 2 of the Office Action). The Examiner has used these limitations of the present claims as a template to be filled with the teachings of Kobayashi. This use of the present claims as a template is tantamount to impermissible hindsight reconstruction.

Expectation of Success

The limitations of the present claims, particularly the bulk density of the fabric have resulted in a fabric having an increased toughness and stretch recovery compared to previous fabrics derived from bicomponent fibers. Aranaga recognizes the potential of the bicomponent fibers to provide a high value non-woven; however, Aranaga also recognizes that fibers having high retractive force tend to crimp independently resulting in an increase in fabric bulkiness at the expense of a decrease in entanglement formation. Kobayashi provides no method through which the bulk density of the fabric may be increased. Therefore, even where the teachings of Aranaga and Kobayashi are combined, no method is provided for the preparation of a polyester bicomponent fabric having an increased bulk density.

Moreover, Kobayashi specifically teaches away from the method of preparing a non-woven fabric provided by the present invention. The present invention achieves an increased bulk density of the fabric by providing constraining surfaces, an outer mechanical force, to the fabric. The goal of Kobayashi is to allow the fabric to increase in thickness and specifically states that no outer mechanical force should be applied. (Column 7, lines 57-59.) In effect, Kobayashi teaches away from the present invention.

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The combination of Aranaga and Kobayashi fails to teach a polyester bicomponent fabric in a well-defined plane having a density of 0.2-0.4g/cm³. Considering that the references are directed to different polymer fibers (polyester versus acrylonitrile), one of skill in the art would have neither the motivation to combine the references nor an expectation of success. Therefore, Applicant respectfully submits that the combination of Aranaga and Kobayashi fails to provide a *prima facie* case of obviousness. Reconsideration and withdrawal of the rejections under Section 103 are appropriate and respectfully requested.

In view of the remarks set forth above, reconsideration and withdrawal of the rejections are appropriate and respectfully requested. Applicant submits that the present claims are patentably distinct over the art and in allowable form. Early allowance is, therefore, solicited. If the Examiner has any questions regarding this response, the Examiner is invited to contact the undersigned attorney.

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Respectfully submitted,



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